

REMARKS

In the Office Action, claims 1, 2, 3, 5 and 7 are objected to because of informalities, claims 1, 2, 3, 4 and 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Collins et al. (US5,657,607), and claims 5-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Collins et al. (US5,657,607) in view of Collins et al. (US5,591,536).

As described in the instant specification, the present invention is designed to overcome the difficulty in manufacturing conventional evacuated glass panels in which degassing devices have to be disposed in the thin space between planar glass sheets, and the drawback of sealing the air discharge hole by a small pump-out tube through solder glass. Accordingly, in the evacuated glass panel of the invention, a groove is formed on the inner surface of the planar glass sheet for disposing the degassing device. A low melting point glass powder layer is formed between the degassing device and the groove to fix and joint the degassing device with the groove.

In the detailed action, the examiner rejects claims 1-4 and 8 by citing that Collins et al. (US5,657,607) disclose a getter material 7 positioned in a groove 6 on the interior of one of glass sheets 2. Although the examiner admits that Collins et al. fail to specifically disclose the getter is adhered to the glass sheet using a low melting glass powder, the examiner considers it as obvious to one having ordinary skill in the art based on Collins' disclosure of using glass solder to fix the pump-out tube 12.

In response to the detailed action, applicants respectfully contend that the rejection is unwarranted. Positioning the getter material freely in the groove as taught by Collins et al. is exactly the widely used conventional approach discussed in the background of the art in the instant specification. There has been no teaching or suggestion in any of the prior arts including Collins et al. to create a low melting glass powder layer between the getter and the groove. The drawbacks of concentration of stress and occurrence of micro cracks around the getter were seen in the conventional evacuated glass panels. Through diligent research and development, applicants discover the use of a low melting glass powder layer between the degassing device and the groove to overcome the drawbacks.

MPEP 2143.01I specifies that “Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so”. Throughout the disclosure of Collins et al. (US5,657,607), there has been neither teaching nor suggestion that their getter material has to be fixed or jointed to the groove. Furthermore, Collins’ use of solder glass as cited by the examiner is for the purpose of sealing the pump-out device to avoid air leak. There is no motivation for Collins et al. to use solder glass for the getter material because air leak is absolutely not a concern in positioning the getter material in the groove. From the above discussion, applicants respectfully submit that the rejection of claims 1, 2, 3, 4 and 8 under 35 U.S.C. §103(a) as being unpatentable over Collins et al. should be withdrawn according to MPEP 2143.01I.

In response to the office action, claims 1-8 are cancelled. New claim 9 which has

corrected all the informalities pointed out by the examiner is presented to replace the original claim 1 to more clearly define the invention in a patentable way. Claim 9 which specifically recites the structure of the evacuated glass panel of the instant invention including the disposition of a low melting point glass powder layer between the degassing device and the groove should be allowable. By virtue of dependency, new claims 10-12 should also be allowable.

In the above amendment, new claim 13 is further presented to claim another embodiment of the invention in which the degassing device is placed in an air discharge hole above a groove formed on an inner surface of the glass sheet with a low melting point glass powder layer between the degassing device and a sealing piece. It should be noted that neither Collins et al. (US5,657,607) nor Collins et al. (US5,591,536) have disclosed or suggested putting a degassing device (getter material) in an air discharge hole. There is absolutely no teaching of forming a low melting point glass powder layer over the degassing device below the sealing piece in any of the cited prior arts. Applicants respectfully submit that the new claim 13 should be allowable, and claims 14-17 should also be allowable by virtue of dependency.

It should also be noted that new dependent claims 10 and 15 respectively claim that said low melting point glass powder layer has a thermal conductivity smaller than the thermal conductivity of said at least two planar glass sheets. As discussed in the instant invention, having a smaller thermal conductivity in the glass powder layer provides the unexpected advantage of preventing the formation of micro cracks on the glass sheets when the degaussing device is heated. None of the cited prior arts has taught, suggested

or anticipated such a unique feature. Applicants respectfully point out that claims 10 and 15 define patentable subject matter by themselves in addition to the dependency to their respective base claims.

From the foregoing discussion, it is evident that the instant invention differs from the cited prior arts. The physical difference results in different effects and is not obvious. The new claims 9-17 are in full condition for allowance under 35 U.S.C. §103(a) over the cited prior arts. The specification has been amended to correct a few editorial and grammatical errors. Prompt and favorable reconsideration of the application is respectfully solicited.

Respectfully submitted,

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